Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-68 (Canceled)

69. (Currently Amended) A method of determining whether a human has a carcinoma or an increased likelihood of developing a carcinoma, the method comprising:

(a) providing a biological sample from the human, wherein the biological sample comprises a Normal Epithelial Specific-1 (NES1) gene, the expression of which is down-regulated during tumorigenic progression and the sequence of which comprises a coding sequence that encodes a polypeptide that is at least 95% identical to SEQ ID NO:1; and

(b) examining the expression of ~~a Normal Epithelial Specific-1 (NES1) gene in a biological sample obtained from the human,~~ the NES1 gene in the biological sample, wherein a decrease in the expression of the NES1 gene relative to expression of a NES1 gene in a control biological sample ~~indicating~~ indicates that the human has a carcinoma or an increased likelihood of developing a carcinoma.

70. (Previously presented) The method of claim 69, wherein the biological sample comprises an epithelial cell.

71. (Previously presented) The method of claim 69, wherein the biological sample comprises a breast tissue cell.

72. (Previously presented) The method of claim 69, wherein the biological sample comprises a cervical tissue cell.

73. (Previously presented) The method of claim 69, wherein the biological sample comprises a prostate tissue cell.

74. (Previously presented) The method of claim 69, wherein the expression of the NES1 gene is determined by assaying NES1 mRNA expression.

75. (Previously presented) The method of claim 69, wherein the expression of the NES1 gene is determined by assaying NES1 protein expression.

76-81. (Canceled)

82. (Previously presented) The method of claim 69, wherein the biological sample comprises a cell of the skin, large intestine, lung, liver, brain, kidney, ovary, uterus, stomach, esophagus, nasopharynx, larynx, or a glandular tissue.

83. (Previously presented) The method of claim 69, wherein the ~~decrease in the expression of the NES1 gene is a decrease relative to~~ control biological sample is (a) an equivalent biological sample from an unaffected individual; (b) an unaffected biological sample of a similar tissue type from the human; or (c) a standard representing a wild-type level of NES1 expression.

84. (Currently Amended) A method of determining whether a human has a carcinoma or an increased likelihood of developing a carcinoma, the method comprising:

(a) providing a biological sample from a human, wherein the biological sample comprises a NES1 gene, the mutation of which is associated with tumorigenic progression and the sequence of which comprises a coding sequence that encodes a polypeptide that is at least 95% identical to SEQ ID NO:1; and

(b) examining the sequence of the NES1 gene in the ~~a~~ biological sample ~~obtained from the human~~, wherein a mutation in the sequence of the NES1 gene indicates that the human has a carcinoma or an increased likelihood of developing a carcinoma.

85. (Previously presented) The method of claim 84, wherein the biological sample comprises an epithelial cell.

86. (Previously presented) The method of claim 84, wherein the biological sample comprises a breast tissue cell.

87. (Previously presented) The method of claim 84, wherein the biological sample comprises a cervical tissue cell.

88. (Previously presented) The method of claim 84, wherein the biological sample comprises a prostate tissue cell.

89. (Previously presented) The method of claim 84, wherein the mutation is detected by a mismatch detection technique.

90. (Previously presented) The method of claim 89, wherein the mismatch detection technique comprises using NES1-specific primers in a polymerase chain reaction to produce an amplified NES1 sequence.

91. (Currently amended) The method of claim 90, further comprising determining whether the amplified NES1 sequence exhibits altered hybridization, or aberrant migration when electrophoresed on a gel~~, or altered binding or cleavage activity~~.

92. (Previously presented) The method of claim 84, wherein the mutation is detected by nucleic acid sequencing.

93. (Previously presented) The method of claim 84, wherein the biological sample comprises a cell of the skin, large intestine, lung, liver, brain, kidney, ovary, uterus, stomach, esophagus, nasopharynx, larynx, or a glandular tissue.

94. (Canceled)

95. (Currently amended) The method of claim 84, wherein the mutation results in a ~~loss of~~ decrease in NES1 expression.

96-99. (Canceled)

100. (New) A method of determining whether a human has a carcinoma or an increased likelihood of developing a carcinoma, the method comprising:

(a) providing a biological sample from the human, wherein the biological sample comprises a NES1 gene, the expression of which is down-regulated during tumorigenic progression and the sequence of which comprises a coding sequence that is at least 95% identical to SEQ ID NO:2; and

(b) examining the expression of the NES1 gene in the biological sample, wherein a decrease in the expression of the NES1 gene relative to expression of an NES1 gene in a control biological sample indicates that the human has a carcinoma or an increased likelihood of developing a carcinoma.

101. (New) The method of claim 100, wherein the biological sample comprises an epithelial cell.

102. (New) The method of claim 100, wherein the biological sample comprises a breast tissue cell.

103. (New) The method of claim 100, wherein the biological sample comprises a cervical tissue cell.

104. (New) The method of claim 100, wherein the biological sample comprises a prostate tissue cell.

105. (New) The method of claim 100, wherein the expression of the NES1 gene is determined by assaying NES1 mRNA expression.

106. (New) The method of claim 100, wherein the expression of the NES1 gene is determined by assaying NES1 protein expression.

107. (New) The method of claim 100, wherein the biological sample comprises a cell of the skin, large intestine, lung, liver, brain, kidney, ovary, uterus, stomach, esophagus, nasopharynx, larynx, or a glandular tissue.

108. (New) The method of claim 100, wherein the control biological sample is (a) an equivalent biological sample from an unaffected individual; (b) an unaffected biological sample of a similar tissue type from the human; or (c) a standard representing a wild-type level of NES1 expression.

109. (New) A method of determining whether a human has a carcinoma or an increased likelihood of developing a carcinoma, the method comprising:

(a) providing a biological sample from the human, wherein the biological sample comprises a NES1 gene, the mutation of which is associated with tumorigenic progression and the sequence of which comprises a coding sequence that is at least 95% identical to SEQ ID NO:2; and

(b) examining the sequence of the NES1 gene in a biological sample obtained from the human, wherein a mutation in the sequence of the NES1 gene indicates that the human has a carcinoma or an increased likelihood of developing a carcinoma.

110. (New) The method of claim 109, wherein the biological sample comprises an epithelial cell.

111. (New) The method of claim 109, wherein the biological sample comprises a breast tissue cell.

112. (New) The method of claim 109, wherein the biological sample comprises a cervical tissue cell.

113. (New) The method of claim 109, wherein the biological sample comprises a prostate tissue cell.

114. (New) The method of claim 109, wherein the mutation is detected by a mismatch detection technique.

115. (New) The method of claim 114, wherein the mismatch detection technique comprises using NES1-specific primers in a polymerase chain reaction to produce an amplified NES1 sequence.

116. (New) The method of claim 115, further comprising determining whether the amplified NES1 sequence exhibits altered hybridization or aberrant migration when electrophoresed on a gel.

117. (New) The method of claim 109, wherein the mutation is detected by nucleic acid sequencing.

118. (New) The method of claim 109, wherein the biological sample comprises a cell of the skin, large intestine, lung, liver, brain, kidney, ovary, uterus, stomach, esophagus, nasopharynx, larynx, or a glandular tissue.

119. (New) The method of claim 109, wherein the mutation results in a decrease in NES1 expression.